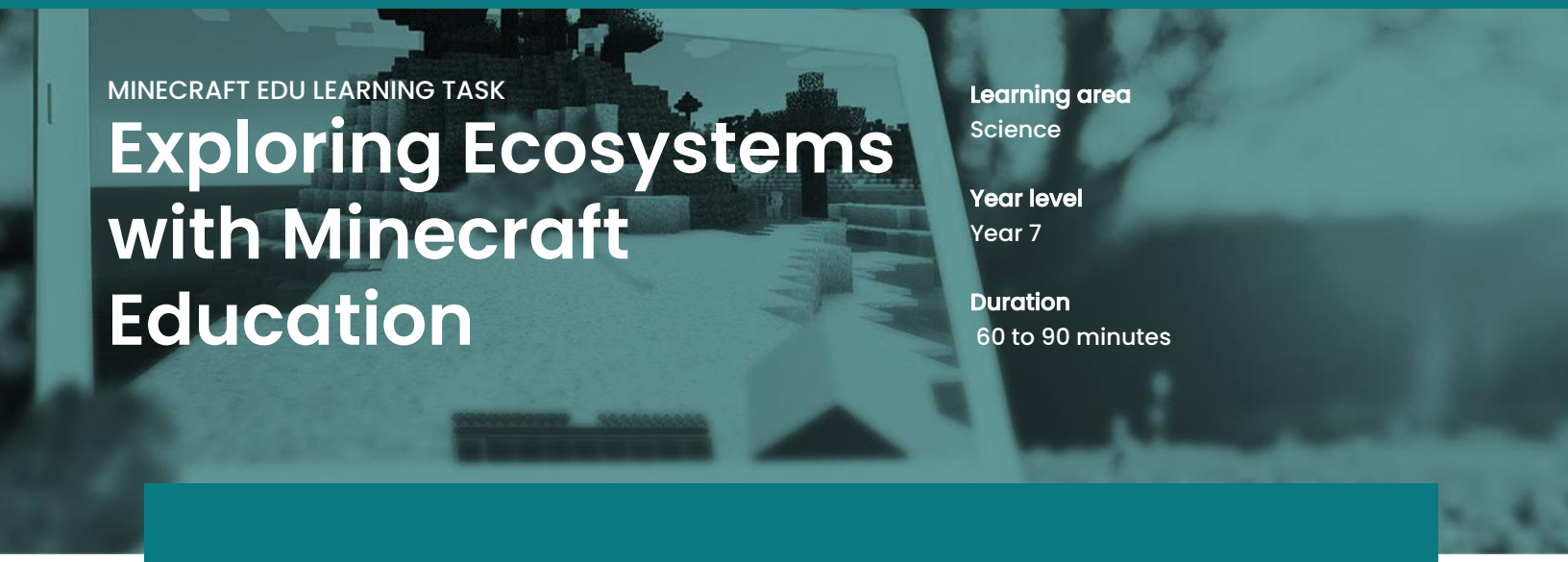

MINECRAFT EDU LEARNING TASK

Exploring Ecosystems with Minecraft Education

Learning area
Science

Year level
Year 7

Duration
60 to 90 minutes

Task summary

In this learning task, students explore ecosystems in Minecraft Education. They learn about ecosystem components and then build virtual ecosystems. They practise recording observations and reflections.

Session overview

Using virtual ecosystems in Minecraft, students model food webs and explore the flow of matter and energy. They predict how changing factors, both biotic and abiotic, affect populations.

Digital technologies

- ☐ VR
- ☐ AR
- ☐ Robotics
- ☐ Drones
- ✓ Other: Minecraft Education

Required resources

Hardware:

- Laptop or Tablets

Apps:

- Minecraft Education

Videos:

- Minecraft Ecosystem Class Project (1:23)

Teaching resources:

- Teaching deck - this is a slide deck template that teachers can download and use for this learning task.
- Student digital notebook - to be distributed either in printed format or digitally via email or school learning management system.

Other resources to try (optional)

N/A

Planning and preparation

NOTE: This learning task may be introduced in the middle or at the end of the unit.

Assumptions
Students should:

- have prior knowledge of ecosystems and an understanding of the roles producers, consumers and decomposers play within these ecosystems; and
- have an understanding of biotic and abiotic factors within an ecosystem.

Additional preparation for teachers

- Familiarise yourself with Minecraft Education.

Note: Ecosystems (although slightly different to biomes), are referred to as **biomes** in Minecraft Education.

Task Sequence

1

Introductory activity / Provocation
(10 -15 mins)

Begin by discussing what ecosystems are and their importance in the natural world. Run through key vocabulary such as:

- producers, consumers, decomposers
- biomes and how they differ from ecosystems
- biotic, abiotic features

Introduce the concept of virtual ecosystems and explain that students will be using Minecraft Education to explore and build them.

2

Prior knowledge check
(5- 10 mins)

To begin, show students Minecraft Ecosystem [Class Project]. If time permits, divide students into small groups. Instruct each group to log into Minecraft Education. Provide instructions for students to navigate to pre-built ecosystems within the game. You will find them in the library section of the site, under starter worlds and biomes. Encourage students to explore the different components of each ecosystem (biome in Minecraft) , such as plants, animals, soil, water, and climate.

After watching the video or exploring the pre-built ecosystems, facilitate a class discussion where students share their observations and discoveries.

1. What did you notice about the different components of the ecosystems you explored in Minecraft?
2. Can you describe any interesting interactions between the plants and animals within the virtual ecosystems?
3. How did the climate or geography of the virtual ecosystems affect the organisms living there?
4. Were there any unexpected features or patterns you observed while exploring the virtual ecosystems?

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3

Activities
(20 -35 mins)

1. Briefly review the key components of ecosystems discussed earlier.
2. Instruct students to work in pairs or small groups to design and build their own virtual ecosystems within Minecraft Education.
3. Encourage students to consider factors such as climate, geography, flora, and fauna when designing their ecosystems
4. Circulate around the classroom to provide guidance and support as needed.
5. Allow time for students to present their virtual ecosystems to the class, explaining their design choices.

4

Check for understanding
(5-10 mins)

Instruct students to write down what they observed while exploring virtual ecosystems in Minecraft Education in their Student digital notebook. Encourage students to reflect on the importance of each ecosystem component and how they contribute to the overall balance of the ecosystem.

You can use the following for guiding questions:

1. Did you encounter any challenges or obstacles while building your own virtual ecosystems? How did you overcome them?
2. What similarities did you notice between the virtual ecosystems and real-world ecosystems?
3. How do you think the virtual ecosystems we explored in Minecraft compare to ecosystems you've seen or learned about in the real world?
4. What are some important lessons about ecosystem balance and sustainability that you learned from this activity?
5. If you could make any changes or additions to the virtual ecosystems, what would you do differently and why?
6. How do you think the skills and knowledge gained from exploring ecosystems in Minecraft could be applied to real-world environmental conservation efforts?

Allow time for students to share their reflections with a partner or small groups.

Differentiation for students with additional needs	Extension ideas	Video tips
Some students may want to work in pairs to complete their digital notebooks or ecosystems. Some may also opt to provide video or audio responses instead of written ones.	Students compare virtual ecosystems in Minecraft with real-world ones, presenting their findings to the class to deepen understanding of ecological principles.	The video for this learning task is an introduction to the Minecraft project of building a virtual ecosystem. https://youtu.be/irQXTF4F6h0

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Curriculum Connections

Australian Curriculum Version 9.0

Year 7 - Science
Use models, including food webs, to represent matter and energy flow in ecosystems and predict the impact of changing abiotic and biotic factors on populations (AC9S7U02)

Cross-curriculum priorities

- ☐ Aboriginal and Torres Strait Islander Histories and Cultures
- ☐ Asia and Australia's Engagement with Asia
- ✓ Sustainability

General capabilities

- ✓ Literacy
- ✓ Numeracy
- ✓ Digital Literacy
- ✓ Critical and creative thinking
- ✓ Personal and social capability
- ☐ Ethical understanding
- ☐ Intercultural understanding

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